

WHAT IS CLAIMED IS:

1. A backlight assembly comprising:

a lamp assembly including a plurality of lamps, arranged in parallel, to
5 generate a light, a power voltage being applied to the lamps through the lamp
assembly;

a receiving container to receive the lamp assembly, the receiving container
including a bottom face and side faces;

a plurality of sensors, disposed in the receiving container, to detect an
10 operation state of the lamps and to output a plurality of sensing signals, one of the
sensors facing a respective lamp;

an inverter including i) a lamp driving module, disposed outside the receiving
container, to provide the lamps with the power voltage, ii) voltage cut-off module
comparing the sensing signals with a predetermined reference signal, the voltage
15 cut-off module providing the lamp driving module with a voltage cut-off signal to
prevent the lamp driving module from providing the lamps with the power voltage
when at least one of the sensing signals has an amplitude smaller than the reference
signal.

20 2. The backlight assembly of claim 1, further comprising a reflection
plate, disposed between the sensors and the lamp assembly, to reflect the light.

3. The backlight assembly of claim 1, wherein each of the lamps
including a lamp body, a first electrode formed at a first end of the lamp body, and a
25 second electrode formed at a second end of the lamp body, the second end facing

the first end.

4. The backlight assembly of claim 1, wherein the lamp assembly further comprises a module through which the power voltage is supplied to the lamps, the module includes a first module and a second module, the first electrode of each of the lamps is connected in parallel to the first module, the second electrode of each of the lamps is connected in parallel to the second module.

5. The backlight assembly of claim 1, wherein the sensors includes a conductive member and a signal line, the conductive member transduces a magnetic flux generated from at least one of the lamps to a current signal to output the sensing signal and is insulated from the receiving container.

6. The backlight assembly of claim 5, wherein the conductive member and the signal line are electrically insulated from the receiving container by an insulation member.

7. The backlight assembly of claim 1, wherein a distance between an outer surface of a first lamp and a first sensor is in a range from about 1mm to about 5mm, the first sensor being disposed over the first lamp, and the first lamp being one lamp among the lamps.

8. The backlight assembly of claim 1, further comprising an opening disposed on the bottom face of the receiving container; and a connection member that electrically connects the sensors to the inverter, the

connection member passing through the opening.

9. The backlight assembly of claim 1, wherein each of the sensors further includes:

5 a photoelectric sensor to detect the light generated from at least one of the lamps; and

a signal line to electrically connect the photoelectric sensor to the inverter.

10 10. The lamp driving apparatus of claim 8, wherein the photoelectric sensor includes one selected from the group consisting of an amorphous silicon thin film, a phototransistor and a photodiode, and transduces the light generated from at least one of the lamps to a current signal.

15 11. The backlight assembly of claim 9, further comprising a reflection plate, disposed between the sensors and the lamp assembly, to reflect the light, the reflection plate having a plurality of openings, the openings being disposed over the respective sensors.

20 12. The backlight assembly of claim 1, wherein each of the sensors includes:

a printed circuit board;

a conductive member, disposed on the printed circuit board, to detect a magnetic flux generated from at least one of the lamps and to transduce the magnetic flux to a current signal; and

25 a signal line that electrically connects the inverter to the printed circuit board.

13. The backlight assembly of claim 12, wherein the signal line is disposed on a flexible printed circuit board.

5 14. The backlight assembly of claim 12, wherein at least one of the sensors overlap with a portion of the inverter to reduce a distance between the sensors and the inverter.

10 15. The backlight assembly of claim 12, wherein the sensors are disposed on the bottom face of the receiving container to be arranged along an array line forming a predetermined angle with respect to a longitudinal direction of the lamps, the inverter is disposed adjacent to an end of the array line to reduce a distance between the sensors and the inverter.

15 16. The backlight assembly of claim 1, wherein each of the sensors includes:

a printed circuit board;

a photoelectric device, disposed on the printed circuit board, to transduce a light generated from at least one of the lamps to a current signal to output the
20 sensing signal; and

a signal line that electrically connects the inverter to the printed circuit board.

25 17. The backlight assembly of claim 16, further comprising a reflection plate, disposed between the sensors and the lamp assembly, to reflect the light generated from the lamps, the reflection plate having a plurality of openings, each of

the openings allowing the light to be incident into at least one of the sensors.

18. A liquid crystal display device comprising:

a backlight assembly including i) a lamp assembly having a plurality of lamps,
5 arranged in parallel, to generate a light, a power voltage being applied to the lamps
through the lamp assembly; ii) a plurality of sensors to detect an operation state of
the lamps and to output a plurality of sensing signals, one of the sensors facing a
respective lamp;

an inverter providing the lamps with the power voltage to turn on the lamps,
10 comparing the sensing signals with a predetermined reference signal, and outputting
a voltage cut-off signal to prevent the power voltage from being applied to the lamps
when at least one of the sensing signals has an amplitude smaller than the reference
signal; and

a liquid crystal display panel that changes the light into an image to display
15 the image.

19. The liquid crystal display device of claim 18, wherein the sensors
includes a conductive member, and the conductive member transduces a magnetic
flux generated from at least one of the lamps to a current signal to output the sensing
20 signal.

20. The liquid crystal display device of claim 18, wherein the sensors
includes a photoelectric device and a signal line, the photoelectric device transduces
the light generated from at least one of the lamps to a current signal to output the
25 sensing signal, and the signal line connects the photoelectric device to the inverter.

21. The liquid crystal display device of claim 18, wherein the sensors are disclosed on a printed circuit board, and the sensing signal is applied to the inverter through a flexible circuit board.

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22. The liquid crystal display device of claim 18, wherein the inverter includes:

a lamp driving module that provides the lamps with the power voltage to turn on the lamps; and

10 a voltage cut-off module comparing the sensing signals with the predetermined reference signal, the voltage cut-off module providing the lamp driving module with the voltage cut-off signal to prevent the lamp driving module from providing the lamps with the power voltage when at least one of the sensing signals has the amplitude smaller than the reference signal.

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